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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/995,565	11/29/2001	Satoshi Hirano	216369US2DIV	3208

22850 7590 08/27/2003

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ALEXANDRIA, VA 22314

EXAMINER

MCKINNON, TERRELL L

ART UNIT	PAPER NUMBER
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3743

12

DATE MAILED: 08/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/995,565

Applicant(s)

HIRANO, SATOSHI

Examiner

Terrell L Mckinnon

Art Unit

3743

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 3,4 and 6-9 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 6-9 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. 09/505,687.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Receipt is acknowledged of applicant's request for reconsideration filed July 24, 2003. Claim 4 is pending and an action on the merits is as follows.

Applicant's arguments with respect to claim 4 have been considered but are moot in view of the new ground of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Goswami et al. (U.S. 5,687,706) in view of Perry et al. (U.S. 4,142,576).

Goswami discloses a storage tank device comprising:

- a storage tank charge with a heat storage material and a heat transport device (30) disposed in the central portion in the heat storage tank;
and
- a suppression means for suppressing natural convection of the heat storage material; wherein
- the suppressing means is disposed in the outer portion in the heat storage tank (column 3, lines 43-51).

Goswami's invention fails to disclose a heat transport device, which executes an injection and extraction of heat between the inside of the storage tank and the outside by the inflow and outflow of a heat transfer medium.

However, Perry teaches the use of a heat transport device (14, 14a and 14b), which executes an injection and extraction of heat between the inside of the storage tank and the outside by the inflow and outflow of a heat transfer medium (column 3, lines 50-53 and lines 65-68).

Given the teachings of Perry, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the heat storage device of Goswami with a heat transport device which executes an injection and extraction of heat between the inside of the storage tank and the outside by the inflow and outflow of a heat transfer medium.

Doing so would provide an efficient and alternative means of supplying a heat transfer medium for storing heat from the outside.

Response to Arguments

Applicant's arguments filed July 24, 2003 have been fully considered but they are not persuasive.

Applicant's states, Goswami fails to disclose or suggest suppressing radial convection and heat transfer.


Applicant's claim is to suppressing natural convection, wherein it would have been obvious to one of ordinary skill in the art at the time of the invention that Goswami's suppression means would suppress natural convection a well.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Terrell L Mckinnon whose telephone number is 703-305-0059. The examiner can normally be reached on Monday -Thursday and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Henry Bennett can be reached on 308-0101. The fax phone numbers for the organization where this application or proceeding is assigned are 703-308-7764 for regular communications and 703-308-7764 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1148.



Terrell L Mckinnon
Patent Examiner
Art Unit 3743
August 26, 2003